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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,895	09/16/2003	Gail A. Alverson	324758001US2	4522

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EXAMINER	
WILSER, MICHAEL P	
ART UNIT	**PAPER NUMBER**
2195	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/663,895	ALVERSON ET AL.	
	Examiner	Art Unit	
	Michael Wilser	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 July 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/31/07, 6/4/07, & 8/1/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are pending in this application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 13-18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following claim language is vague or indefinite:

(i) As per Claim 13, lines 1-3, recites "A computer-readable storage medium encoded with instructions for scheduling tasks, by a method comprising". It is uncertain how "storage medium encoded with instructions" can perform a method without having some processor executing the instructions first. The "executing instructions of a task on a parallel processor architecture" should be included in the preamble of the claim to incorporate the needed functionality.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 7-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

6. As per Claims 7-12, although the preamble of the claims recite "system", the body of the claims include only software components such as "a component that". Claims 7-12 neither include any computer hardware components nor positively recite that the cited software components are stored on a computer medium that can be read by a machine. As such, Claims 7-12 are directed to software per se which is non-functional descriptive material and non-statutory since the claims do not require physical transformation and the invention as claimed does not produce a useful, concrete, and tangible result to form the basis of statutory subject matter under 35 U.S.C 101.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-12 & 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mak (US 5,960,212) in view of Jones et al. (US 5,812,844) and Gong (US 6,125,447).

9. As per Claim 1, Mak teaches the invention substantially as claimed including a method for scheduling tasks comprising:

a. notifying a task executing on parallel processor architecture that it is being preempted from utilizing the processor (column 4, lines 55-59);

b. receiving an indication that the task is ready to be swapped out (column 4, lines 58-61); and

c. determining that the task can be swapped back in (column 4, lines 59-60).

10. However, Mak does not explicitly disclose of indicating that the task is indicated as being blocked and deferring the switching until of the task back into processing until it is unblocked. However, Jones discloses a method in which the task is indicated as

blocked (column 15, lines 1-4) and indicating when the task has become unblocked (column 15, lines 62-66).

11. It would have been obvious to one having ordinary skill in the art at the time of invention to include the blocking indication in Jones to be the blocked task indication in Mak's invention. Indicating which task is blocked in Mak would allow the processor to only select tasks that are ready to run and would prevent the system from running into a deadlock by selecting a task that no progress can be made on.

12. However, neither Mak nor Jones explicitly discloses that there are multiple simultaneously executing protection domains. However, Gong discloses a method in which there are simultaneously executing protection domains (column 2, lines 57-60).

13. It would have been obvious to one having ordinary skill in the art at the time of invention to have used the protection domains in Gong to provide added security for the tasks in Mak's invention. This added security would allow the systems security policies to remain in place regardless of which domain the task was currently executing in.

14. As per Claim 2, Mak further discloses that the computer system is a multithreaded computer system (column 4, line 55).

15. As per Claim 3, Mak further discloses that in response to the notification, the task saves its state (column 4, lines 65-67).

16. As per Claim 4, Jones further discloses that the event is an indication from an operating system (column 1, lines 44-46).

17. As per Claim 5, Jones further discloses that the indication of whether the task is blocked includes an identification of a thread of the task that is blocked (column 15, lines 2-4).

18. As per Claim 6, Jones further discloses tracking a number of threads of the task that are blocked (column 15, lines 63-67).

19. As per Claim 7-12, they are rejected for the same reason as Claims 1-6 above.

20. As per Claim 19, Gong further discloses that tasks can be swapped back into different protection domains then their original one (column 3, lines 36-40).

21. As per Claim 20, Gong further discloses multiple protection domains (column 2, lines 55-56).

22. Claims 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US 5,812,844) in view of Gong (US 6,125,447).

23. As per Claim 13, Jones teaches the invention substantially as claimed including:

a. determining that a thread of the task is blocked (column 15, lines 1-4); and

b. sending an indication to an operating system that the task is ready to be swapped out (column 1, lines 44-46) and the thread is blocked (column 15, lines 1-4).

24. However, Jones does not explicitly disclose that there are multiple simultaneously executing protection domains. However, Gong discloses a method in which there are simultaneously executing protection domains (column 2, lines 57-60).

25. It would have been obvious to one having ordinary skill in the art at the time of invention to have used the protection domains in Gong to provide added security for the tasks in Jones's invention. This added security would allow the systems security policies to remain in place regardless of which domain the task was currently executing in.

26. As per Claim 14, Jones further discloses that the determining is done y the task (column 15, lines 2-3).

27. As per Claim 15, Jones further discloses of incrementing a variable relating to the number of blocked threads (column 16, lines 20-30).

28. As per Claim 16, Jones further discloses receiving an indication from the operating system that the thread is no longer blocked (column 15, lines 62-67).

29. As per Claim 17, Jones further discloses decrementing a variable relating to a number of blocked threads (column 16, lines 20-30).

30. As pr Claim 18, Gong further discloses the task does not know which protection domain it was executing on (column 8, line 40-45).

Allowable Subject Matter

31. The following is a statement of reasons for the indication of allowable subject matter: Claim 1 would be found to be allowable if rewritten with all of the limitations of Claims 5 and 19 included in the independent claim.

Response to Arguments

32. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

33. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Wilser whose telephone number is (571) 270-1689. The examiner can normally be reached on Mon-Fri 7:30-5:00 EST (Alt Fridays Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MPW
August 30, 2007

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